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A simple generation of exactly solvable anharmonic oscillators. (English) Zbl 0941.81022
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Summary: An elementary finite difference algorithm shortens the Darboux method, permitting an easy generation of families of anharmonic potentials almost isospectral to the harmonic oscillator. Against common belief, it is possible to associate a SUSY partner to a given Hamiltonian H using a factorization energy greater than the ground state energy of H . The explicit 3-SUSY partners of the oscillator potential are found and discussed.

MSC:

81Q05 Closed and approximate solutions to the Schrödinger, Dirac, Klein-Gordon and other equations of quantum mechanics

Cited in **1** Review
Cited in **27** Documents

Keywords:

finite difference algorithm; Darboux method; anharmonic potentials; SUSY partner; Hamiltonian; oscillator potential

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